



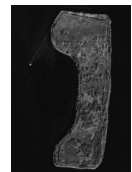
Grassy Island Forum Overview

October 12, 2006

East Lansing Field Office
&

Detroit River International Wildlife
Refuge

U.S. Fish and Wildlife Service



Where we've been...

- Previous forums
 - December 1, 2005
 - March 9, 2006
- Past Highlights
 - Preliminary Assessment / Site Inspection
 - Scoping for remedial investigations
 - Modeling for leaching potential
 - Interagency coordination agreement
- Handouts available in back
 - also at <http://www.fws.gov/midwest/GrassyIsland/>

What to expect this evening...

- Overview of site and current action items
- The State's role in this remedial process
- Plant, bird, and mussel survey results/update
- Fish survey results
- Ecological risk update
- Sediment survey overview
- Human health consultation overview
- Next steps
- Audience questions

Service Goals for Grassy Island

- Grassy Island should have the following characteristics...
 - In compliance with regulatory responsibilities
 - Contaminants are not a risk to wildlife using Grassy Island or to humans visiting it
 - Habitat for fish and wildlife is protected
 - Habitat provides wildlife's requirements for survival and reproduction

Remedial Investigation and Feasibility Study: Basis for an Informed Decision

- What contaminants are present?
- What form are they in and in what concentrations?
- Are they being released from the site?
- Are humans or other organisms being exposed now? In the future? How?
- If so, do the exposures pose a risk?
- If so, what *could* be done to reduce risk and protect human health and the environment?
- What *should* be done?

Tasks Proposed at March Forum

- Dike wall inspection of Grassy Island
- Further scoping of dike wall seepage
- Surface water pathway investigation
- Human health consultation
- Biological surveys
- Screening level ecological risk assessment
- Baseline ecological risk assessment

Additional Tasks Based on Citizen Input

- “Do not enter” signs placed on Grassy Island
- Memo written to explain how Grassy Island funds have been spent
- The Service met with the U.S. Coast Guard to get additional information regarding vessel groundings in the vicinity of Grassy Island and adequacy of existing navigational aids
 - USCG has determined that they are sufficient to prevent grounding near Grassy

Signage on Grassy

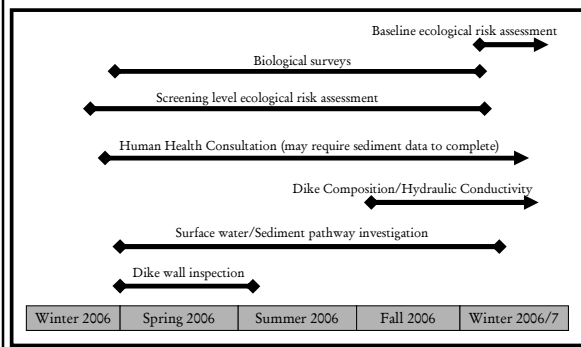
- Put warning signs along the perimeter of Grassy Island



Dike Wall Inspection

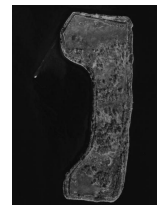
- Service and U.S. Army Corps of Engineers conducted a visual inspection this spring
- Corps concluded:
 - Dikes are structurally stable, safe, and operationally adequate under current conditions
 - Visual inspection can not determine physical composition of the dike walls, dike wall porosity, or other geotechnical properties
 - Dike maintenance should include tree management

Investigations Timeline



What to expect this evening...

- Overview of site and current action items
- The State's role in this remedial process
- Plant, bird, and mussel survey results
- Fish survey results
- Ecological risk summary
- Sediment survey overview
- Human health consultation
- Next steps
- Audience questions

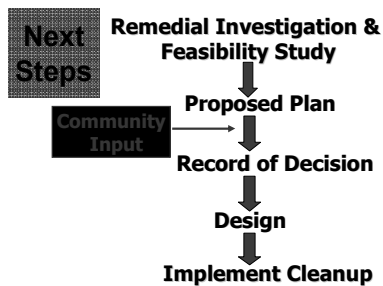


Keith Krawczyk
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Background Information and MDEQ Role for the Grassy Island site:

- Through discussions between the USFWS, USEPA and the MDEQ, it was determined that Grassy Island would not be listed as a Superfund site.
- Investigation and remediation of Grassy Island would follow the Superfund framework, but under the oversight and with the assistance of the MDEQ and its cleanup authority.

Superfund Process



Tasks

- Participate in project scoping and planning
- Review and comment on planning documents (work plans)
- Review and comment on Remedial Investigation/Feasibility Study report and related documents, Proposed Plan and Record of Decision
- Coordination, correspondence, and technical assistance



U.S. Fish & Wildlife Service **Biological Surveys of Grassy** **Island:** **Progress Report**

Stephanie Millsap, PhD
Detroit River Sub-Office
U.S. Fish and Wildlife Service
Grassy Island Forum 10/12/06

Plant Survey

- Conducted this spring by members of the Michigan Botanical Club
 - Volunteer effort
 - Surveyed area between two dikes most intensely



- Larry Nooden, PhD submitted the final plant list and a brief narrative

Plant Survey Continued

- Identified ~100 plant species
 - Majority of dominant species were invasives
 - 47% were native species
 - Important river-bottom natives (e.g., cottonwood, American hackberry, box elder, and a shrub rough-leaved dogwood) are abundant
- Full list available online:
 - www.fws.gov/midwest/grassyisland/



Bird Survey

- Conducted in July by Rouge River Bird Observatory
 - Effort concentrated in southern half and northern tip
- 36 bird species observed
 - 23 of which breed in the area
 - High densities of Warbling Vireos and Yellow Warblers observed
 - Likely an important site during spring migration



Insect Survey

- Also conducted in July by Rouge River Bird Observatory
- 17 species of dragonflies and butterflies observed
 - Relatively low diversity
 - Grassy Island lacks surface water, emergent vegetation, and nectar sources
- Julie Craves submitted final report and full list available online:
 - www.fws.gov/midwest/grassyisland/



Mussel Survey

- Conducted by MNFI
 - Funded via Challenge Cost Share Grant
 - Part of greater Refuge-wide survey
- Preliminary results include data for 3 sites near Grassy
 - Observed a Fatmucket shell (native unionid species) and zebra mussel shells
- Final report will include data for 26 sites, 5 of which will be located near Grassy
 - Expected to be complete in Summer 2007



Amphibian & Reptile Survey

- Conducted by Herpetological Resource & Management
 - Funded via Challenge Cost Share Grant
 - Part of greater Refuge-wide survey
- Preliminary results include observations of:
 - American toad, Butler's garter snake, Eastern garter snake
- Final report due December 2006



Biological Survey Summary

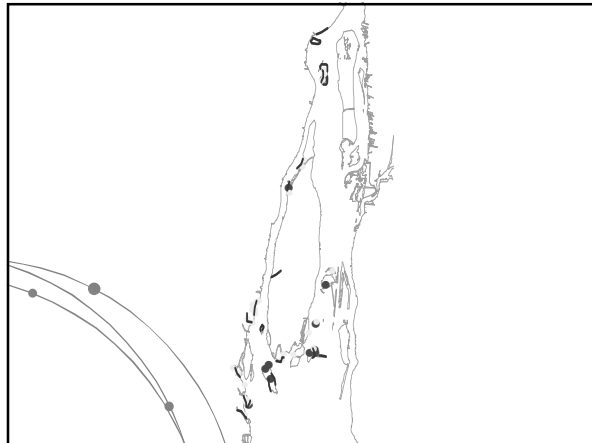
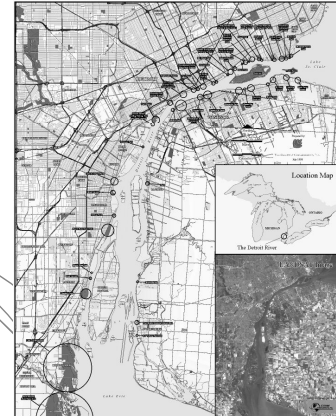
- Partnerships were essential in conducting surveys
- Some surprising results regarding current plant and bird diversity
 - Data important to determine if these species might be exposed to and at risk from contaminants
- Many of the lists are currently available online (www.fws.gov/midwest/grassyisland/)
 - Other surveys are on-going



Grassy Island Forum
October 12, 2006
Wyandotte Boat Club

Jim Francis
MDNR-Fisheries
Southfield

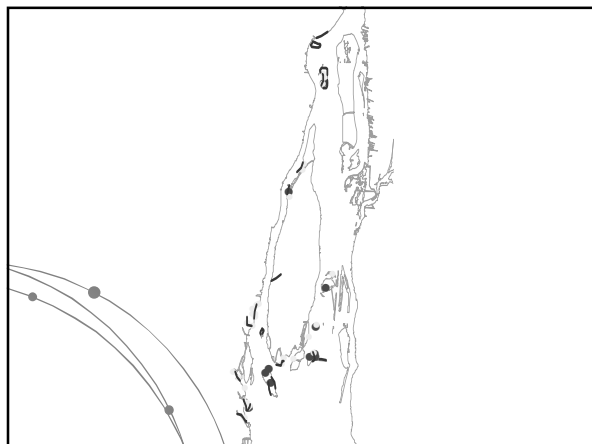
The Detroit River



2006 Fisheries Survey - Summary

14 seine hauls
21 electrofishing sites
29 fyke net lifts

13,103 total fish caught
56 species
16 families



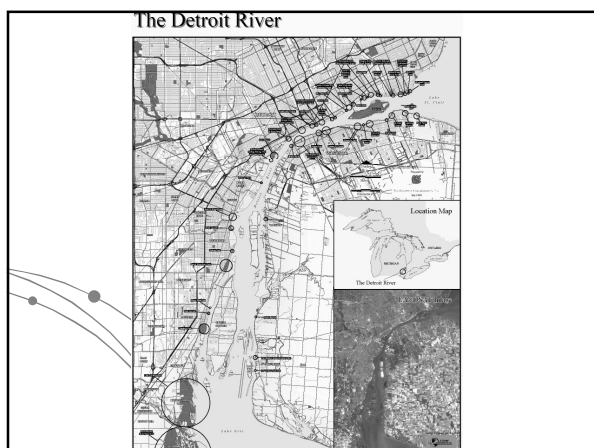
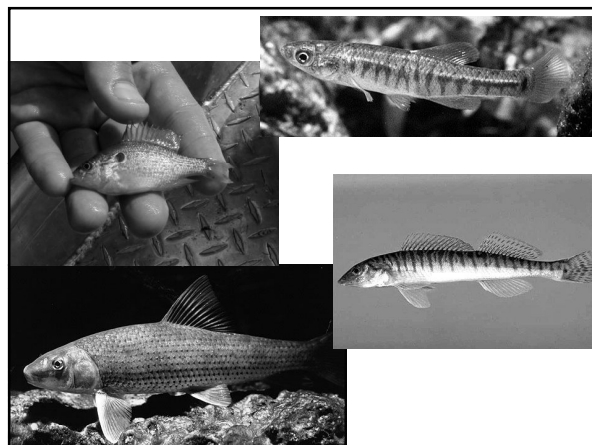


Game fish

Largemouth Bass
Smallmouth Bass
Rock Bass
Bluegill
Pumpkinseed
Yellow perch
Rock bass
Walleye
Muskellunge
Rainbow Trout

Forage fish

Spottail Shiner
Emerald Shiner
Bluntnose minnow
Gizzard Shad
Mimic shiner
Common shiner
Fathead Minnow
Logperch



Summary

Grassy Island provides important fish habitat for game and forage fish

The variety of habitat the island provides increases its value to the fisheries

The location is particularly important to the fisheries in the upper DR

Field Staff



Jeff Braunscheidel
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Grassy Island Forum
October 12, 2006
Wyandotte Boat Club

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U.S. Fish & Wildlife Service

Grassy Island Screening Level Ecological Risk Assessment

Stephanie Millsap, PhD
Detroit River Sub-Office
U.S. Fish and Wildlife Service
Grassy Island Forum 10/12/06

Ecological Risk Assessment is:

... the process that evaluates the likelihood that adverse ecological effects may occur or are occurring as a result of exposure to one or more stressors

U.S. Environmental Protection Agency, 1998.
Guidelines for ecological risk assessment

Function of an ERA

- Document the potential ecological risk that may exist
- Screen contaminants present at a site for those that may pose an ecological risk
- Generate information to evaluate options

Screening Level ERAs are:

- Only used to evaluate ecological risks
 - No human health endpoints considered
 - Only ecologically-based screening values are used
- Intentionally simplified and conservative (i.e. protective)
 - allows for elimination of only those contaminants for which there is high confidence of no adverse effects (risks)

Management Assumptions

Current Conditions

- No public use
- Primarily upland, potential exists for ponding
- Wildlife present

Future Conditions

- Upland habitat only
- No potential for ponding/wetlands
- Limited public use
- Wildlife present

Data Being Used

- Soil data previously collected
 - 42 analytes (PCB, PAHs, metals)
 - Sample sizes: 28 – 80

Screening Methods

- Maximum concentration of each contaminant will be compared to an ecological screening value (ESV)
- The result of that comparison will be expressed as an Hazard Quotient (HQ)
- Contaminants referred to as Contaminants of Potential Environmental Concern (COPECs)

Selection of ESVs

- Often more than one ESV available
 - Must choose which ESV is most appropriate
 - There will be a prioritization of which ESV is used
- ESVs will include:
 - EPA Ecological Soil Screening Level Guidelines
 - Oak Ridge National Laboratory Screening Levels
 - Canadian Environmental Quality Guidelines
 - EPA Region V Ecological Screening Values

Hazard Quotient Approach

$$HQ = \frac{\text{Max COPEC Concentration}}{\text{Ecological Screening Value}}$$

- If Hazard Quotients (HQs) < 1
 - No Risk
- If Hazard Quotients (HQs) ≥ 1
 - Possible risk
 - Evaluate further

Timeline for Completion

- Currently finishing draft
- Internal review next
- Expect Screening Level ERA to be released by March '07
- Final report will be available:
 - Online (www.fws.gov/midwest/grassyisland)
 - Bacon Memorial Library
 - Upon request

Contact Information

- Project manager
 - Stephanie Millsap
 - 9311 Groh Rd
 - Grosse Ile, MI 48138
 - phone: 734-692-7628
 - email: stephanie_millsap@fws.gov



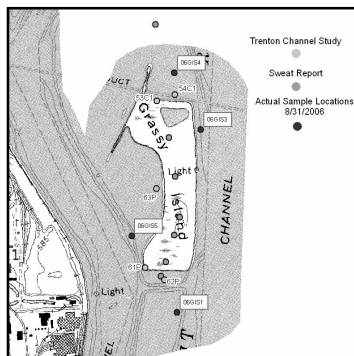
Chemical Analysis of Sediment Around Grassy Island

Chris Hoard
Michigan Water Science Center
Lansing, Michigan

U.S. Department of the Interior
U.S. Geological Survey

Study Background

- The purpose is to identify if contaminants from surface water runoff and eroded material have impacted the river sediments surrounding Grassy Island and to improve characterization of sediments immediately south and west of Grassy Island.
- MDEQ recommended that the U.S. FWS sample nearby sediments, as in integrator over time, to evaluate if there is evidence that contaminated material has eroded from Grassy Island into adjacent areas of the Detroit River.
- The MDCH has indicated that direct contact with the sediments surrounding Grassy would also be included in the assessment.



■ **Sample locations for the study were determined based on flow simulations of the Detroit River developed by the USGS.**

■ **The locations sampled are depicted as purple dots on the site map to the left**



■ **Samples were collected using a vibracoring device deployed from the R/V Mudpuppy in cooperation with USEPA.**

■ **Sediments were then sent to the USGS National Water quality lab for analysis.**

Sampled Constituents

Silver	Manganese	benzo(a)anthracene
Aluminum	Mercury	benzo(b)fluoranthene
Arsenic	Molybdenum	benzo(a)pyrene
Barium	Nickel	benzo(k)fluoranthene
Cadmium	Lead	dibenz(a,h)anthracene
Chromium	Antimony	Indeno(1,2,3-c,d)pyrene
Cobalt	Selenium	naphthalene
Copper	Tin	phenanthrene
Iron	Thallium	pyrene
Zinc	Total PCB	



■ **Sediment samples collected will be analysed for the list of contaminants on the left.**

■ **The results of the sediment core analysis will be compared to Sediment quality guidelines that reflect threshold effect concentrations and Sediment quality guidelines that reflect probable effect concentrations as identified in Tables 1&2 in U.S. EPA's guidance manual as well as U.S. EPA, Region 5 RCRA Ecological Screening Levels**

Continuing work:

- **Sediment analyses will be compared to existing sediment data from previous studies both on Grassy Island and in the Detroit River to determine whether or not material from the Island is affecting the surrounding area.**
- **This information will be used in developing the Human Health Consultation and Ecological Risk Assessment of the Island.**



Timeline

- Lab analyses of the sediment samples are expected to be in by November 2006.
- A Final report of the results of this study should be completed by February 2007.
- A News release will be issued announcing the availability of the report through the U.S. FWS



Grassy Island Health Consultation - Update

Christina Bush, MDCH
October 12, 2006



Topics

- MDCH's role
- Exposure assumptions
 - Default/generic
 - Site specific
- Timing of document

MDCH and ATSDR

- Assist regulatory agencies
- Determine degree of public health hazard:
 - Urgent
 - Not urgent but still present
 - No apparent
 - None
 - Indeterminate

Exposure Assumptions

- Default/generic
 - Exposure frequency
 - Chronic duration
 - Body weight
 - Skin surface area
 - Intake of soil
 - Other sources

Exposure Assumptions (cont'd)

- Site-specific
 - On island once a week (52 days/year)
 - Standing in sediments (fishing) 90 days/year (every day in summer)
 - Swimming in river 60 days/year (5 days/week for 3 months)

Timing of Document

- Current status = internal review
- Next step = review by ATSDR
- Then released for Public Comment (reviewed by YOU)
- When??
- Lastly, Responsiveness Summary

Communications

- From MDCH (general)
 - E-mail and US-mail lists
 - News releases
 - Website: www.michigan.gov/mdch-toxics, click on “Health Assessments and Related Documents”

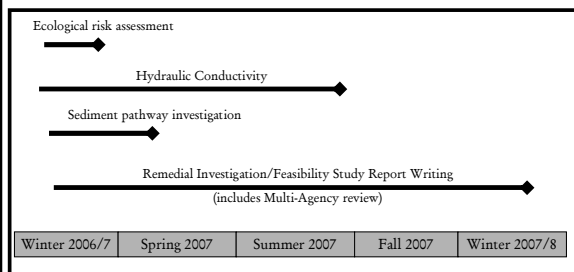
Communications (cont’d)

- To MDCH
 - Toxics Hotline 1-800-648-6942, ask for Christina Bush
 - E-mail = bushcr@michigan.gov
 - US Mail = MDCH-DEOE, Capitol View Bldg, PO Box 30195, Lansing, MI, 48909, Attn: Christina Bush

Forum Summary

- Progress reports on a variety of topics
 - Issues raised by individuals at last forum
 - Remedial Investigation tasks: biological surveys, ecological risk, human health consultation, additional sampling
- Partnerships have been instrumental in getting studies done efficiently and cost-effectively
- Continue to keep you informed regarding site progress

Timeline of Next Steps



Objective: Complete RI/FS by end of 2007

Documents available at:

- <http://www.fws.gov/midwest/grassyisland>
- Bacon Memorial Library
45 Vinewood Ave.
Wyandotte, MI 48192
*ask at reference desk
- Office of Stephanie Millsap
9311 Groh Rd.
Grosse Ile, MI 48138
734-692-7628
*please call ahead to ensure availability

